

# **Global Positioning System (GPS)**

## **Continuously Operating Reference Station (CORS) Network**

**Presented by:**

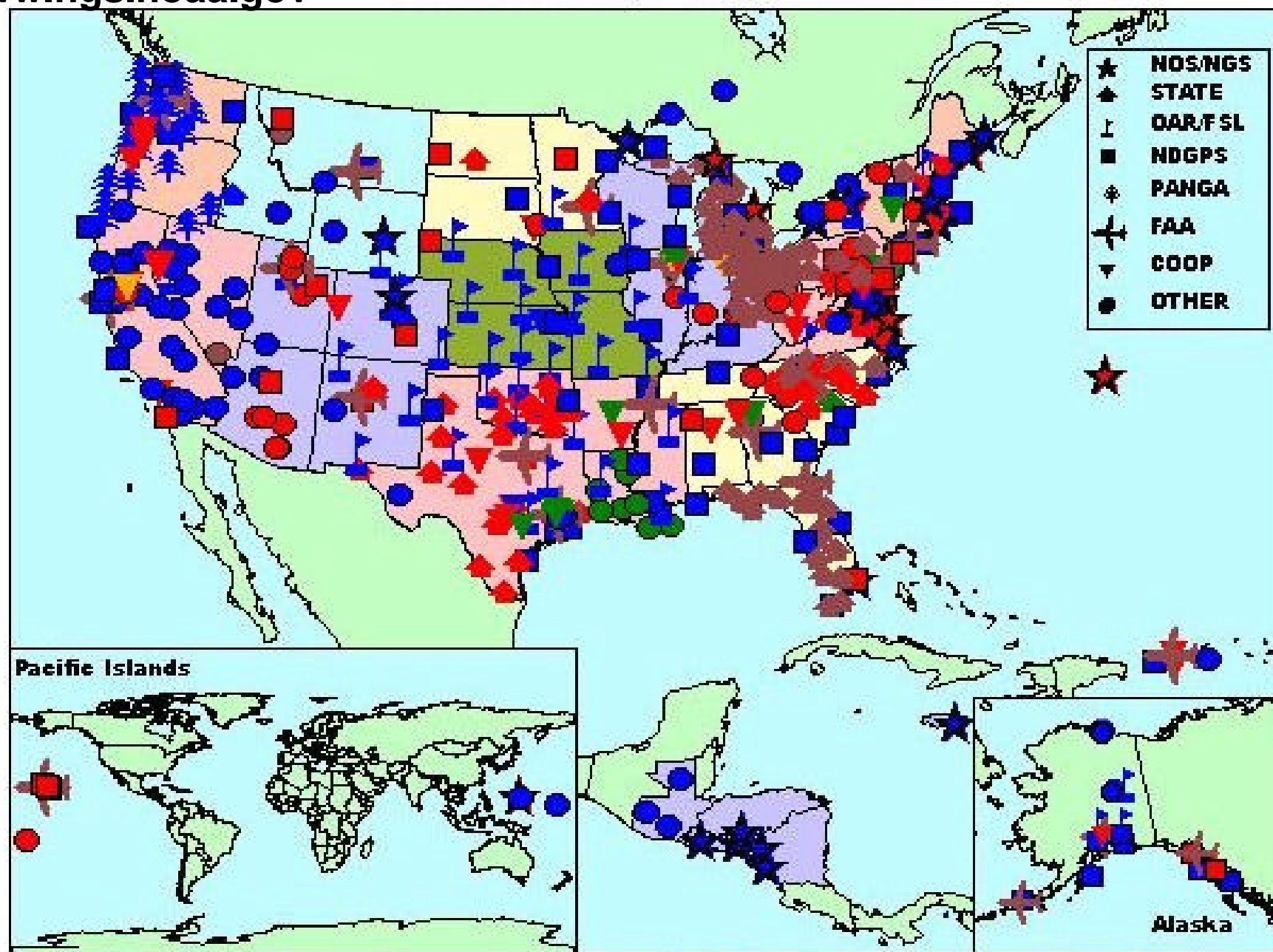
**Curtis L. Smith**

**National Geodetic Survey**

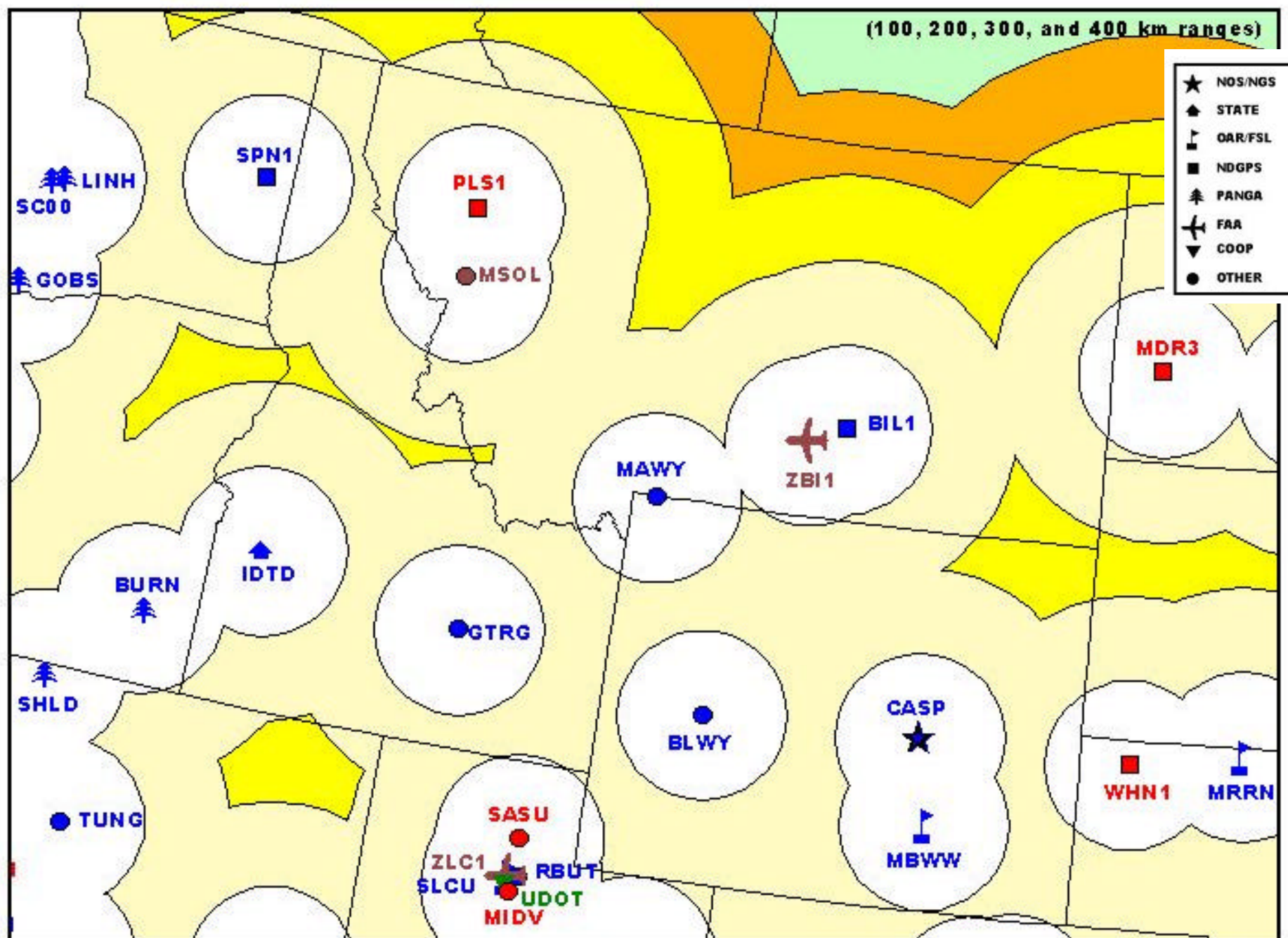
**Geodetic Advisor Idaho/Montana**

**[Cusmith@itd.state.id.us](mailto:Cusmith@itd.state.id.us)**

**208-332-7197**

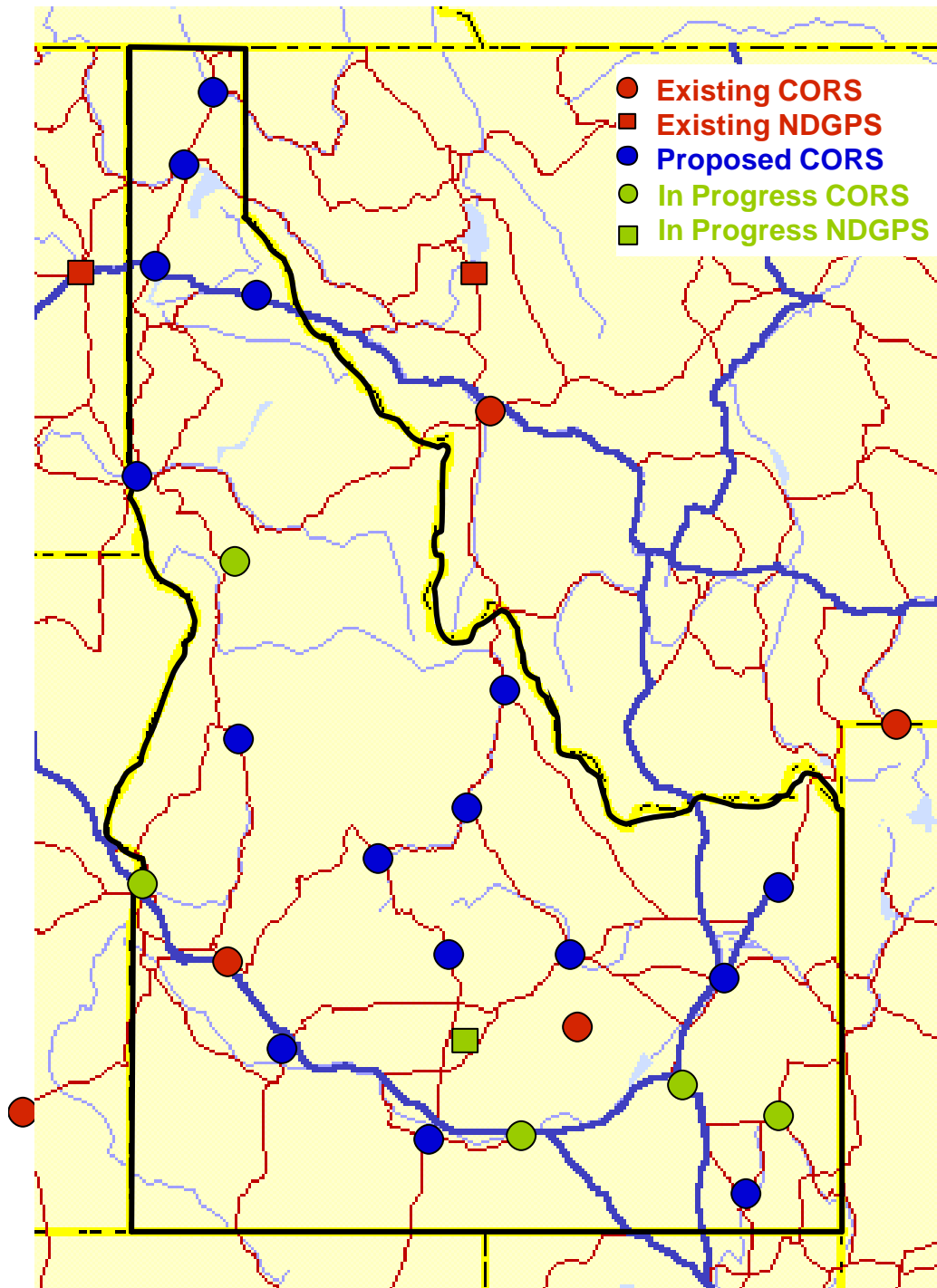


Symbol color denotes sampling rates: (1 sec) (5 sec) (10 sec) (15 sec) (30 sec)



Symbol color denotes sampling rates: (1 second) (5 seconds) (10 seconds) (15 seconds) (30 seconds)

Craig 8/27/03



Bonners Ferry  
 Sandpoint  
 Coeur d'Alene  
 Kellogg  
 Lewiston – LCSC  
 Grangeville – County/USFS  
 McCall – USFS (L1 only)  
 Payette – County  
 Boise – IDTD – ITD/NGS  
 Mountain Home  
 Stanley  
 Sun Valley  
 Shoshone? – NDGPS – USCG/BLM  
 Challis  
 Salmon  
 Twin Falls  
 Burley – BOR  
 Great Rift – GTRG – UofU/INEEL  
 Arco  
 Pocatello – ISU/ITD  
 Idaho Falls  
 St. Anthony  
 Preston  
 Soda Springs – USFS/Monsanto



**Ohio CORS**

**CORS Equipment**







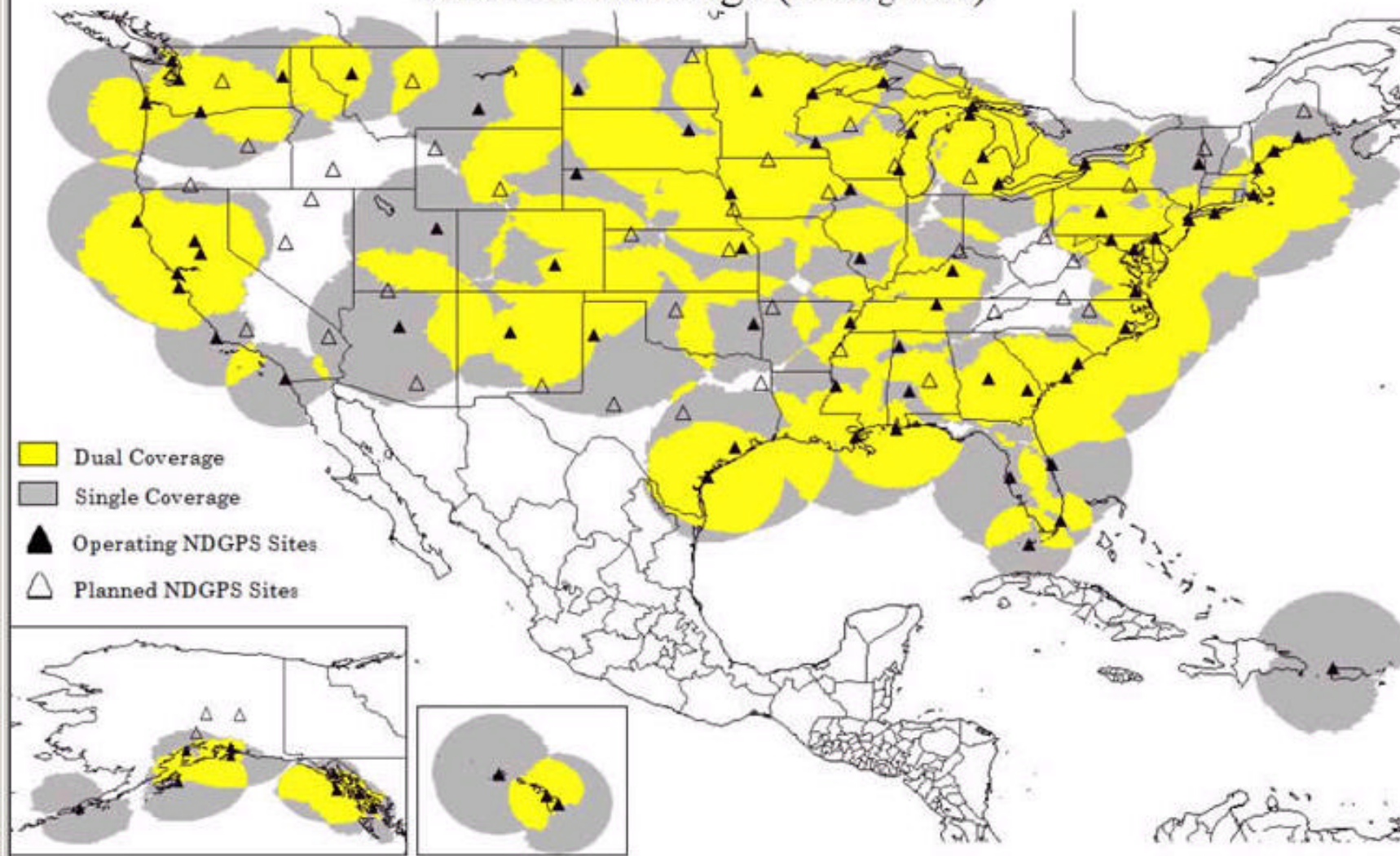
**[www.navcen.uscg.gov/dgps/](http://www.navcen.uscg.gov/dgps/)**

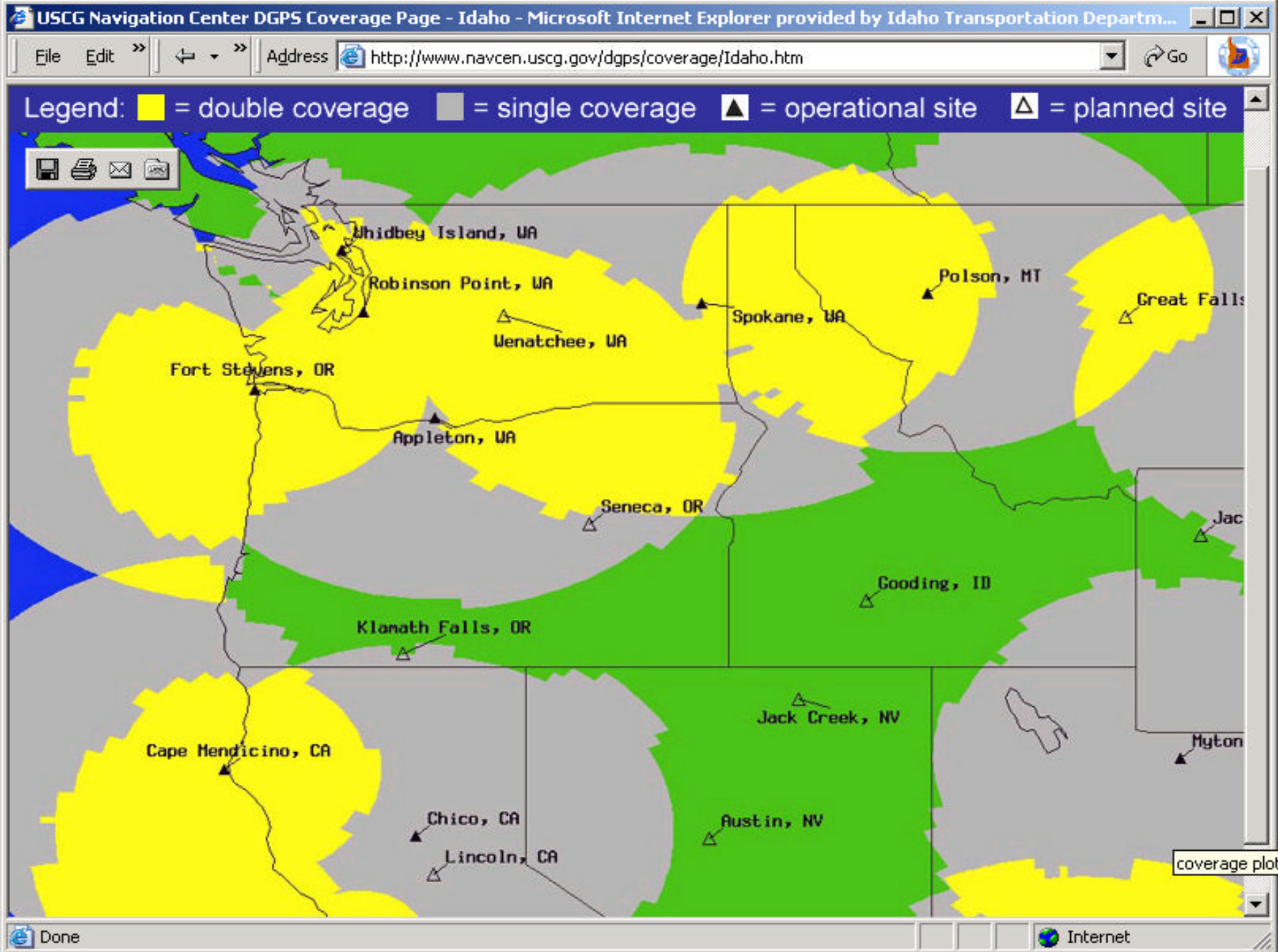
AUG/2003



## Comprehensive DGPS Site Coverage

### NDGPS Coverage (01 Aug 2003)



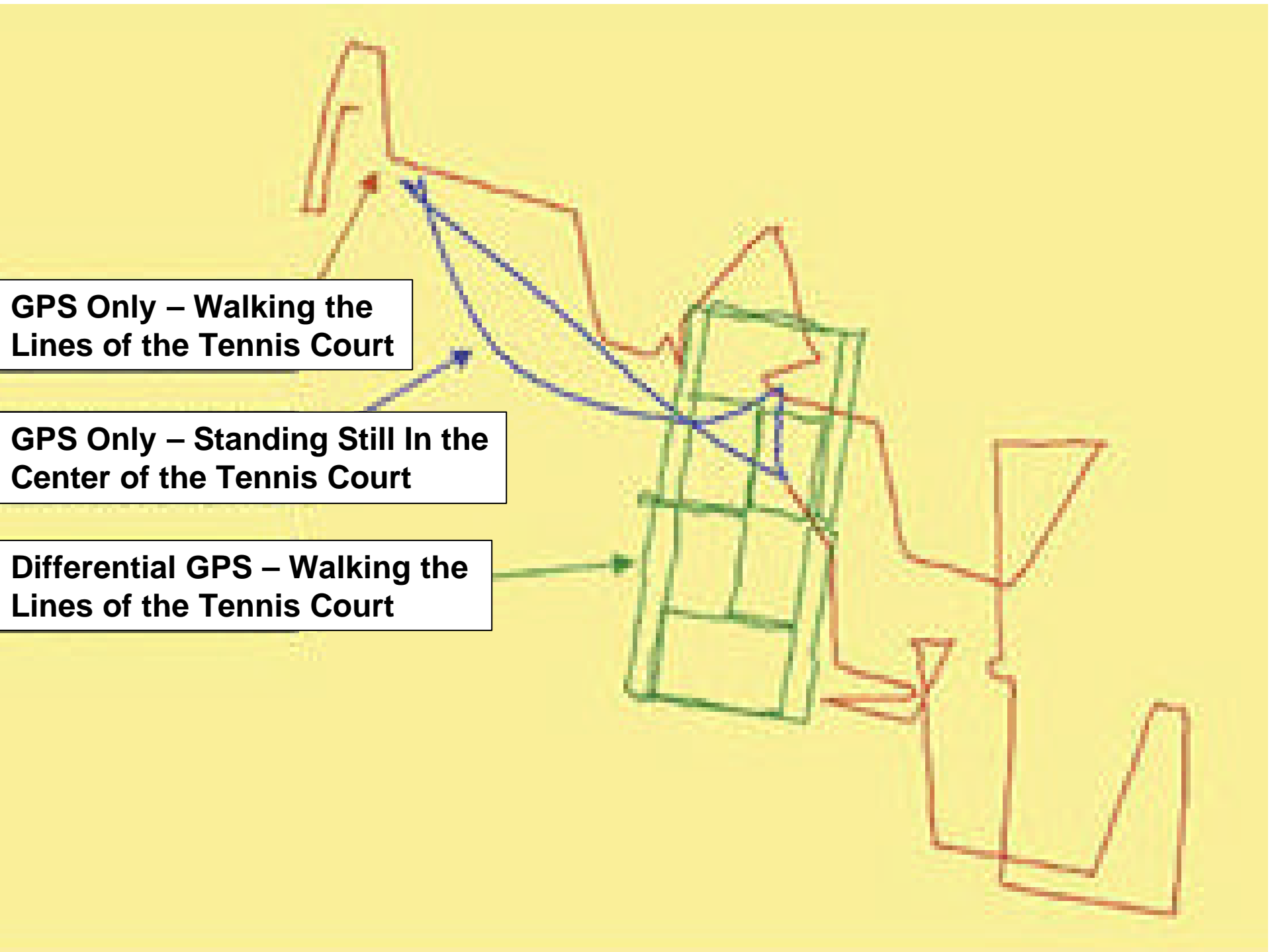




**GPS Only – Walking the  
Lines of the Tennis Court**

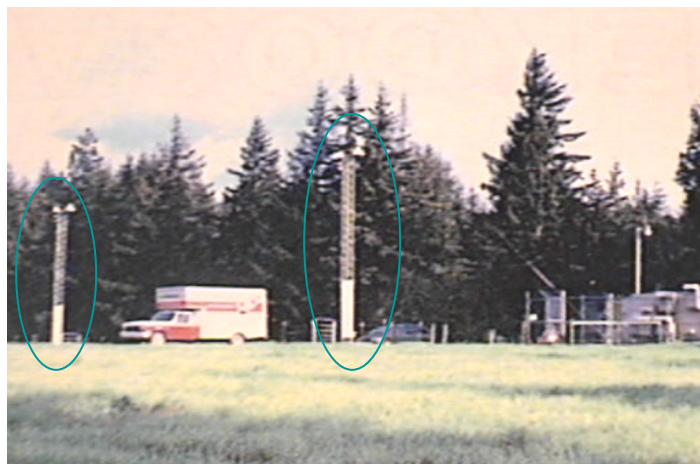
**GPS Only – Standing Still In the  
Center of the Tennis Court**

**Differential GPS – Walking the  
Lines of the Tennis Court**



# Converted GWEN to NDGPS

## *Appleton, WA*

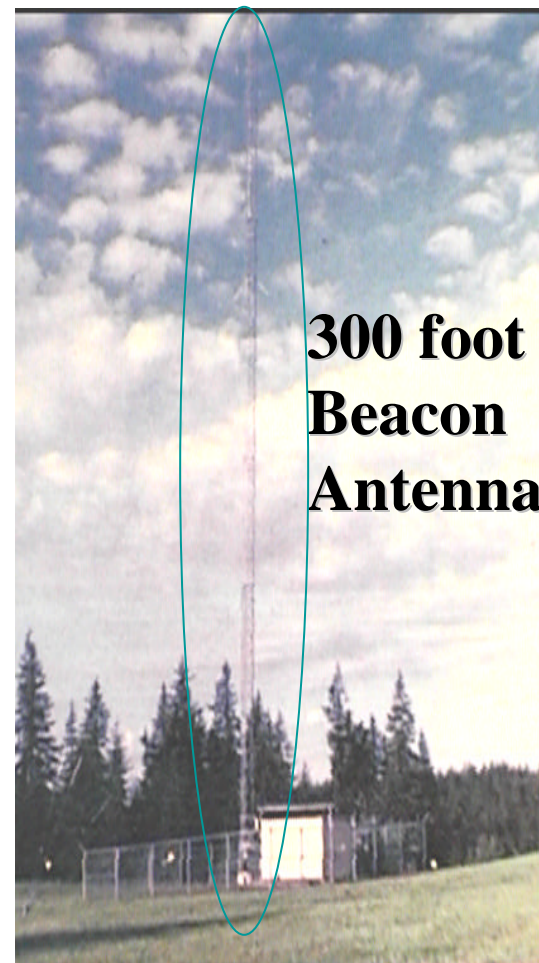


**Reference &  
Integrity  
Antennas**  
*Two sets  
of each*



**DGPS Equipment  
Shelter**

**There is a similar  
shelter for the  
25KW generator**

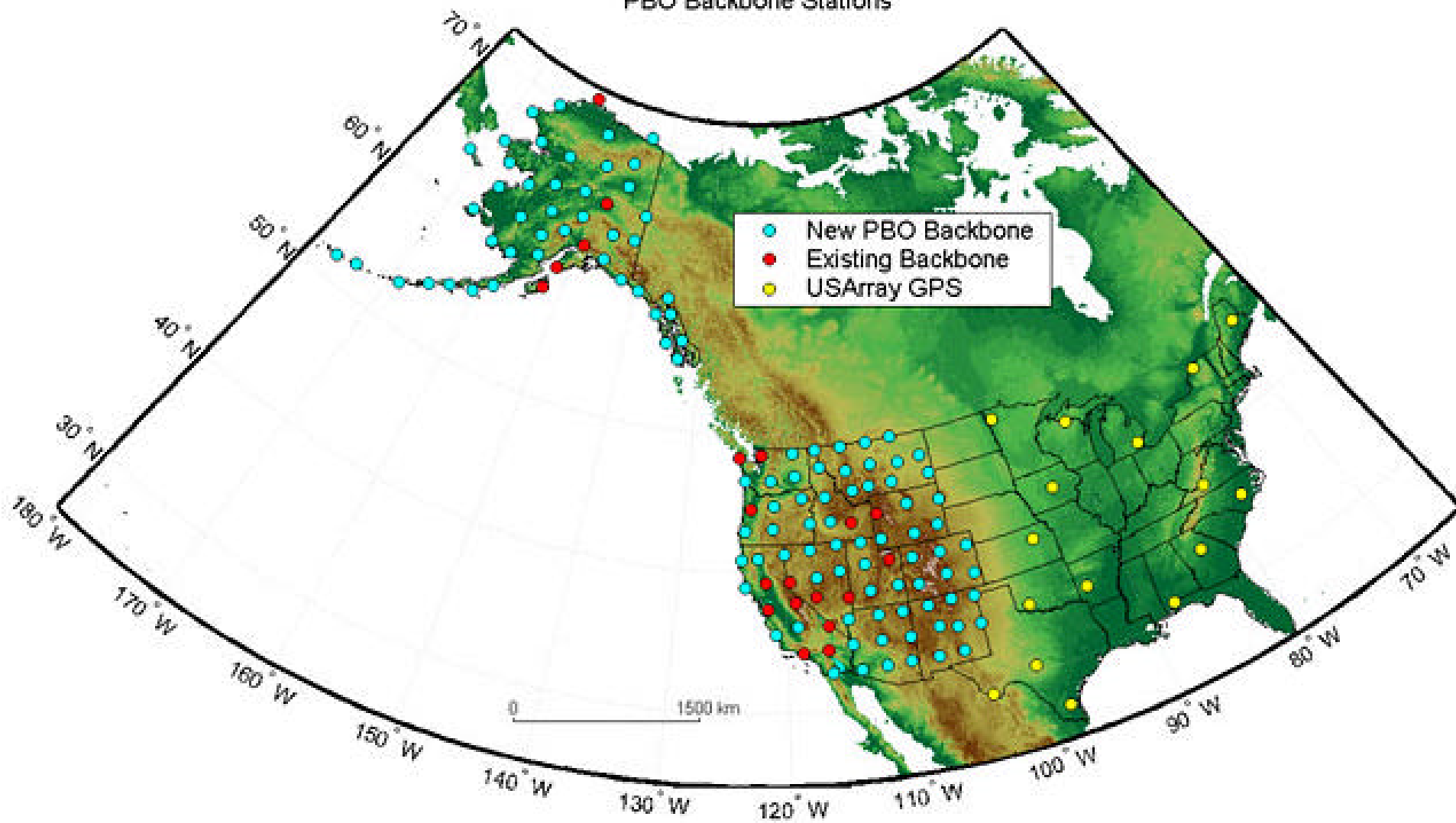


**300 foot  
Beacon  
Antenna**



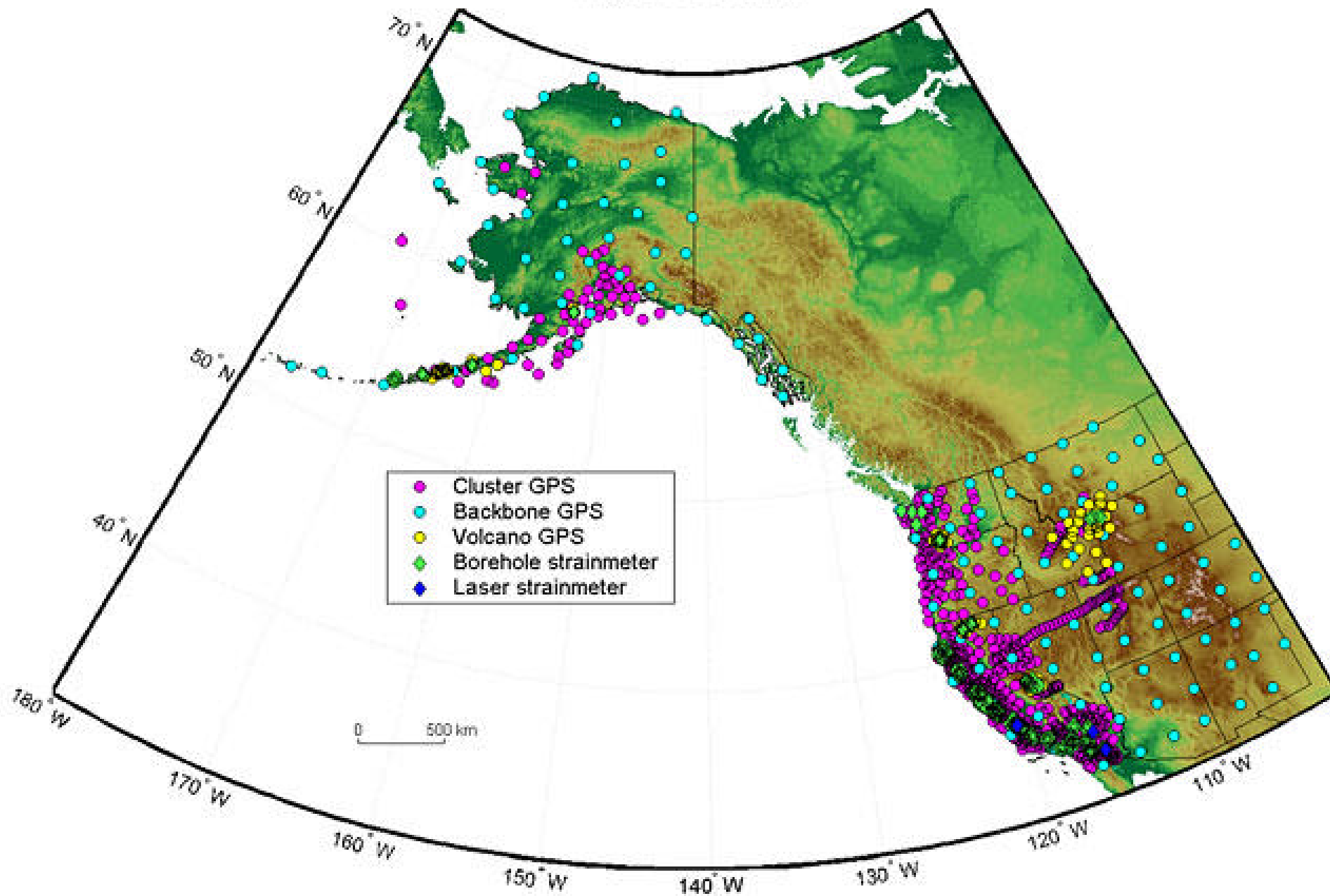


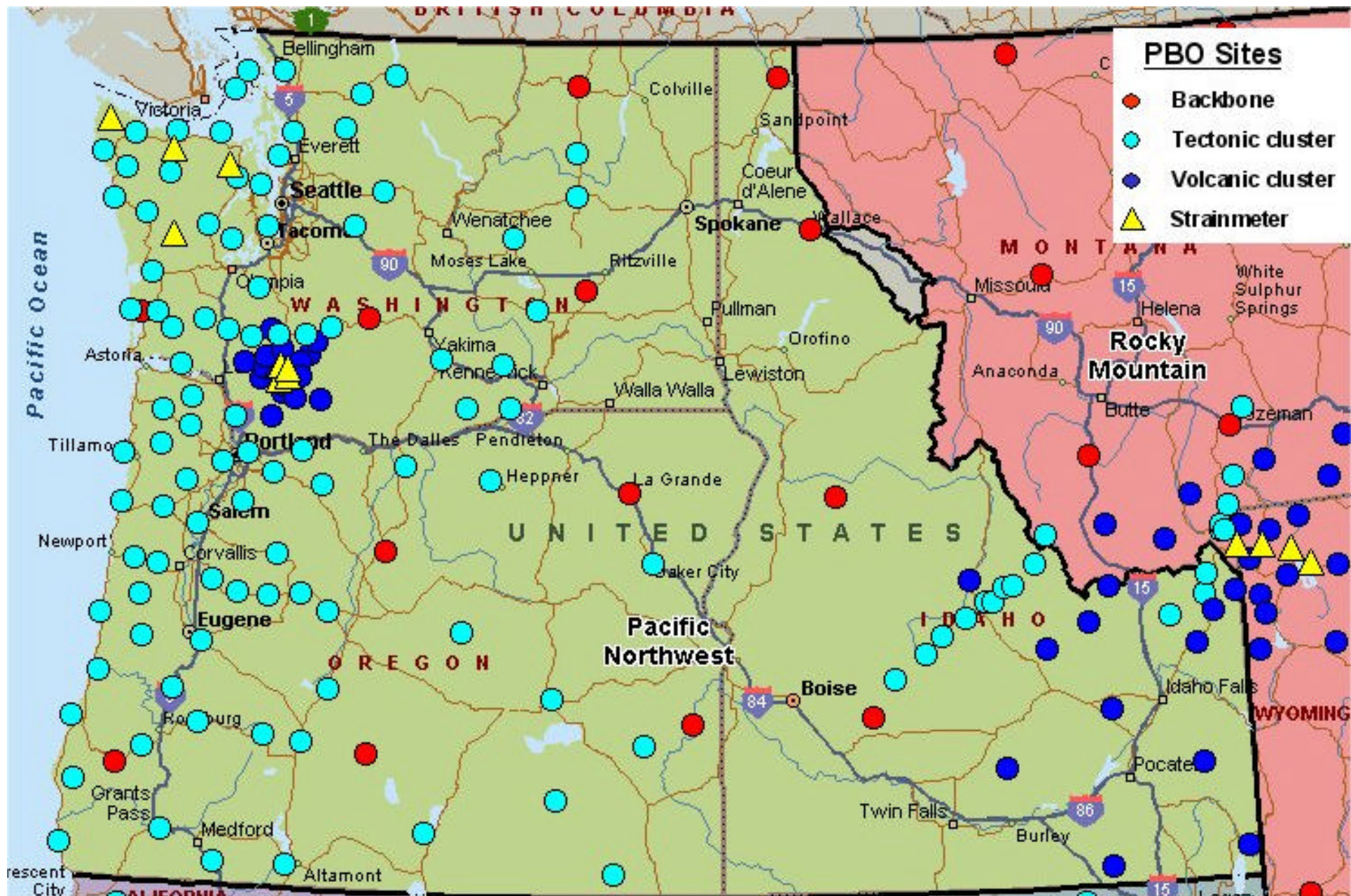
PBO Backbone Stations



➤ **875 GPS Stations**

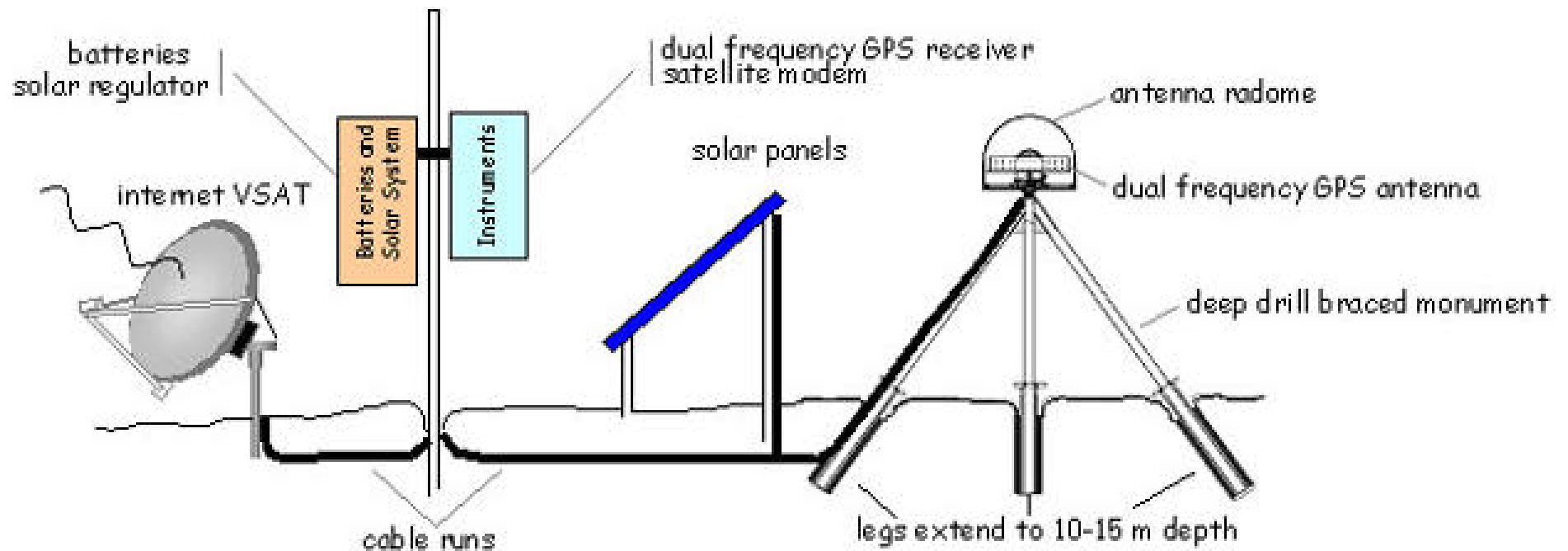
Proposed PBO stations

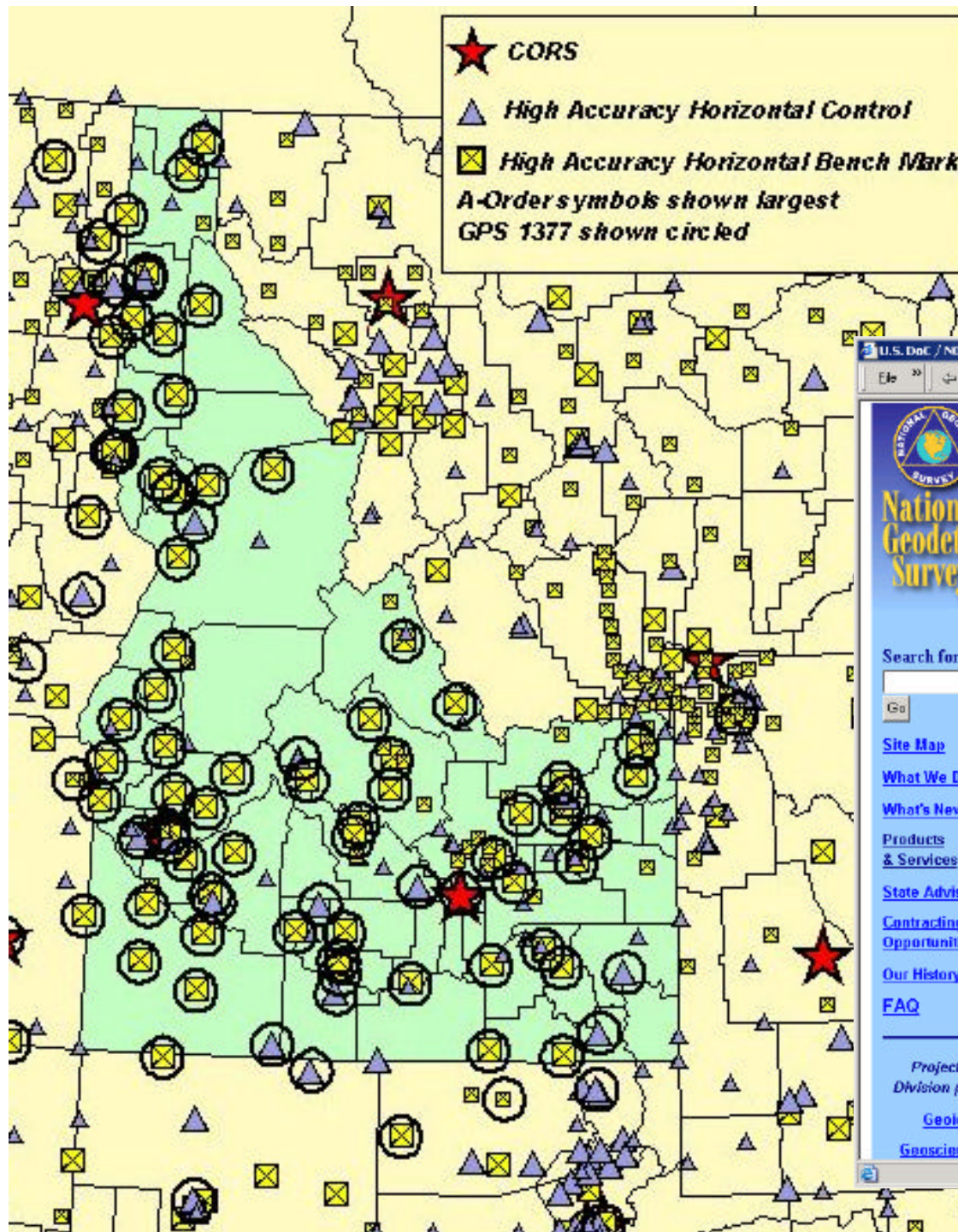




Pacific Northwest Region







# Idaho FBN

[www.ngs.noaa.gov](http://www.ngs.noaa.gov)

U.S. DoC / NOAA / NGS / National Geodetic Survey - Microsoft Internet Explorer provided by Idaho tra...

File Edit View Favorites Tools Address <http://www.ngs.noaa.gov/> Go

**National Geodetic Survey**

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Service

NGS, Positioning America for the Future

[aeronautical data](#) [CORS GPS data](#) [datasheets](#) [geodetic tool kit](#) [PC software](#)

Find/Update a point

Search for  Go

Site Map  
What We Do  
What's New  
Products & Services  
State Advisors  
Contracting Opportunities  
Our History  
FAQ

Project & Division pages  
[Geoid](#)  
[Geosciences](#)

Tuesday, September 16, 2003

• [Upcoming Events](#) • [NGS In The News](#) •  
• [The Observer Newsletter](#) •

**Check these out...**

**Project Proposals:** Data and advice to help you plan your geodetic control surveys.

**GPS vs. Leveling:** In August, NGS is beginning a research project in Colorado to improve surveying techniques... [more](#)

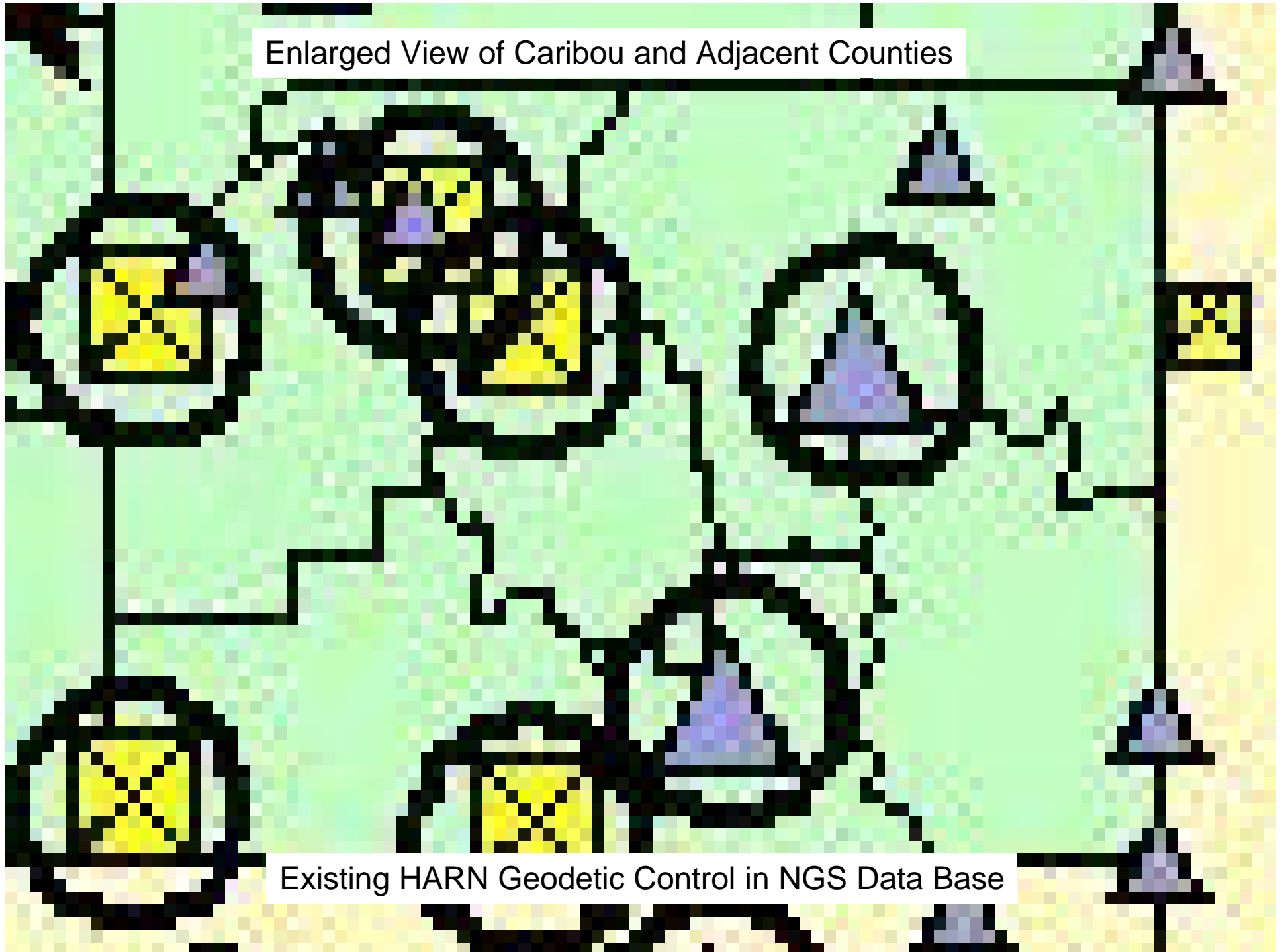
**How much data is enough?** NGS begins a research project in North Carolina to test how much data surveyors need to meet accuracy standards... [more](#)

**OPUS Upgraded:** NGS introduces a new version of OPUS... [more](#)

**NOAA-LSU Study: Portions of Gulf Coast Sinking at Significant Rate:** Increased Attention Given to Address Public's Vulnerability to Severe Weather.

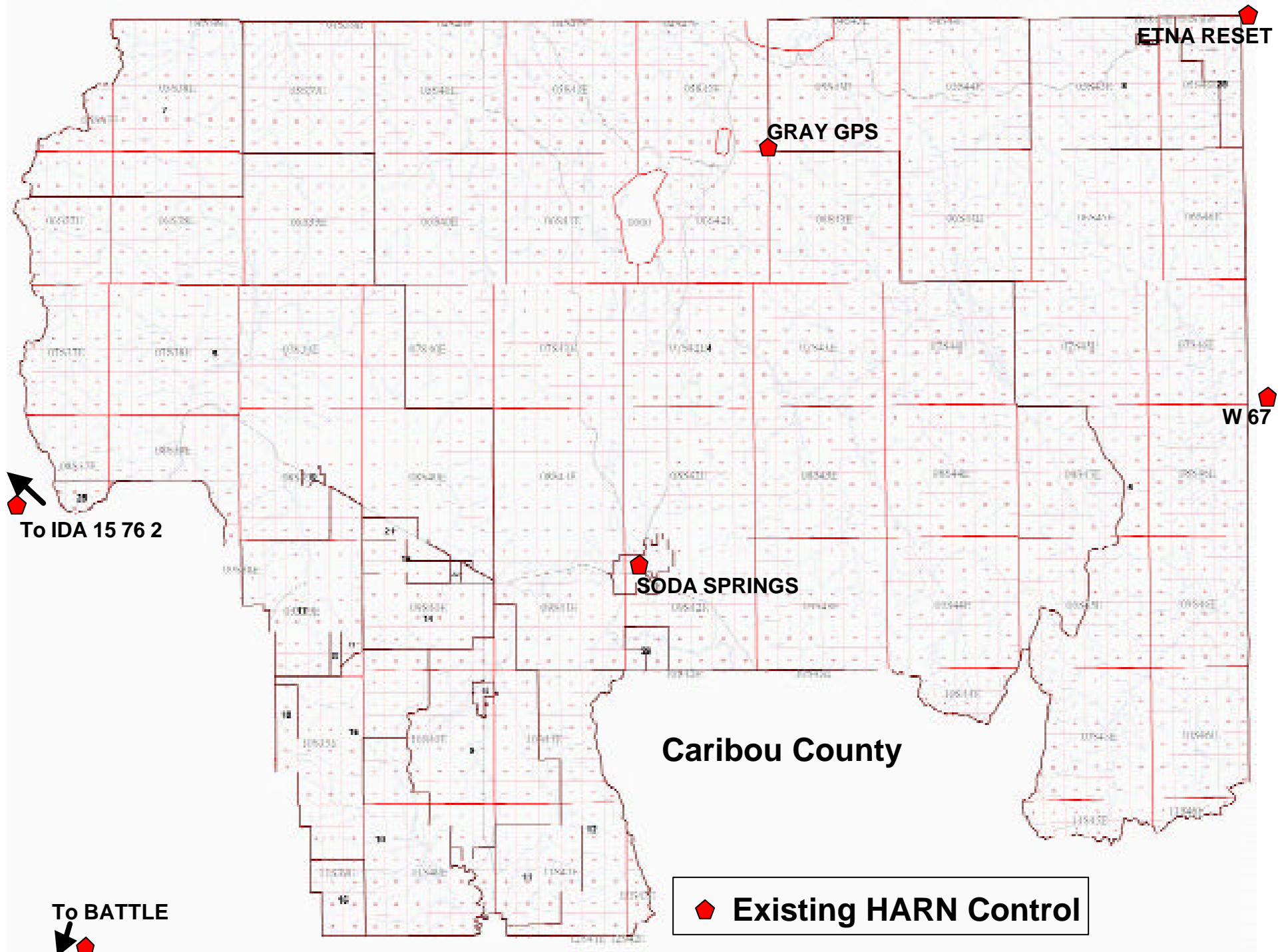
Internet

Enlarged View of Caribou and Adjacent Counties

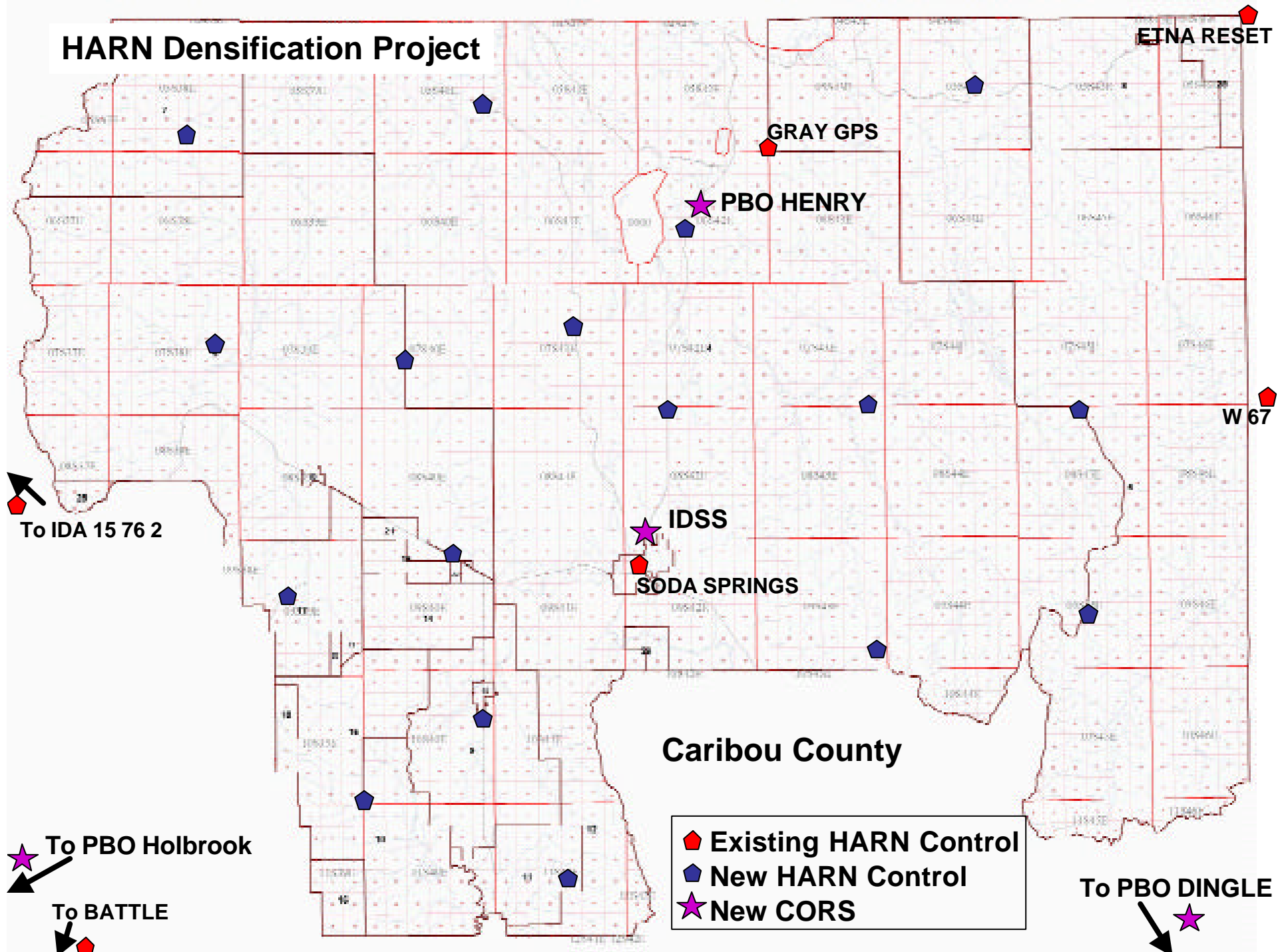


Existing HARN Geodetic Control in NGS Data Base





# HARN Densification Project





## Physically Monumented Points



**Stainless steel rod  
driven to refusal**

**Poured in place  
concrete post**

